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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/506,043	02/17/2000	Qingfeng Tang	LUTA 0252 PUS	7011

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EXAMINER

KUMAR, PANKAJ

ART UNIT PAPER NUMBER

2631

DATE MAILED: 02/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/506,043

Applicant(s)

TANG, QINGFENG

Examiner

Pankaj Kumar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Niki USPN 4,620,147.

3. As per claim 1, Niki teaches a narrow bandwidth super-regenerative receiver comprising: a signal detector (Niki fig. 7: 121 with 105) having a regenerative oscillator (Niki fig. 7: 105) for detecting a signal transmitted at a particular transmit frequency (Niki fig. 7: from 115);

4. A quench circuit (Niki fig. 7: 138 with 136 and 137) connected to the regenerative oscillator (Niki fig. 7: connected via other components) for interrupting the oscillation of the oscillator at a predetermined frequency (Niki paragraph 23: "The desired frequency component is detected first by the signal detector according to the operation described above, and thus the intermediate frequency signal corresponding to the desired frequency component is provided at the output of the frequency converter 121. After the desired frequency component is detected, the frequency sweep in the local oscillator 105 is stopped so that the frequency of the intermediate frequency signal at the output of the frequency converter 121, and the local signal, can both be counted. The intermediate frequency signal thus obtained is supplied to an AND gate 136, whereas the local signal is supplied to an AND gate 137. The AND gate 136 and 137 are opened during a fixed time interval in response to a gate signal from a gate signal generator 138."); and a frequency sweeping circuit (Niki fig. 7: 106) connected to the regenerative

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oscillator (Niki fig. 7: 106) and the quench circuit (Niki fig. 7: 138 with 136 and 137), wherein the quench circuit is arranged to cycle the regenerative oscillator and the frequency sweeping circuit on and off together (Niki fig. 7: the regenerative oscillator and the frequency sweeping circuit are both intertwined with and without other components and then ANDed in 136 and 137 with 138), and the frequency sweeping circuit controls operation of the regenerative oscillator to a desired narrow bandwidth around the transmit frequency (Niki fig. 7: 106 is connected to 105 which is connected to 121).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niki.

7. As per claim 2, Niki teaches the receiver of claim 1 further comprising: for a center frequency f_c , a sweep frequency f_s , a quench frequency f_q , a data rate or a maximum base band frequency of the transmitted signal f_d , and a sweep frequency bandwidth BWs . Niki also teaches $f_s > 2f_d$; and $f_c \gg f_s$ or f_q through inherency since for the system to work properly, the Nyquist principle must be maintained and this means that in order to avoid aliasing data must be sampled at at least twice the bandwidth. What Niki does not teach are the following design characteristics: $BWs = 1-3\%f_c$; $f_s = f_q$. It would have been obvious to one skilled in the art at the time of the invention to modify Niki to teach these design characteristics since it has been held

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that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Also, it would have been obvious to one skilled in the art at the time of the invention to modify Niki to teach these design characteristics since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

8. As per claim 3, Niki teaches the receiver of claim 2 wherein f_s has to be greater than f_d based on the Nyquist principle as discussed above. What Niki does not teach is that $f_s = 10f_d$. It would have been obvious to one skilled in the art at the time of the invention to modify Niki to teach these design characteristics since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

9. As per claim 4, Niki teaches the receiver of claim 1. What Niki does not teach is wherein the frequency sweeping circuit comprises a surfaced acoustic wave resonator. It would have been obvious to one skilled in the art at the time of the invention to modify Niki to teach the frequency sweeping circuit comprises a surfaced acoustic wave resonator since it has been held to be within the general skill of a worker in the art to select a known material (in this case a surfaced acoustic wave resonator) on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

10. As per claim 5, Niki teaches the receiver of claim 1. What Niki does not teach is wherein the frequency sweeping circuit comprises a ceramic resonator. It would have been obvious to one skilled in the art at the time of the invention to modify Niki to teach the frequency sweeping

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circuit comprises a ceramic resonator since it has been held to be within the general skill of a worker in the art to select a known material (in this case a ceramic resonator) on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

11. As per claim 6, Niki teaches the receiver of claim 1. What Niki does not teach is wherein the frequency sweeping circuit comprises an LC resonator. It would have been obvious to one skilled in the art at the time of the invention to modify Niki to teach the frequency sweeping circuit comprises an LC resonator since it has been held to be within the general skill of a worker in the art to select a known material (in this case an LC resonator) on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

USPN 5,235,294, USPN 6,167,246, USPN 4,129,869, USPN 4,205,270, USPN 5,548,832,

USPN 6,263,196 B1, USPN 5,550,747 A, USPN 4,198,601 A

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (703) 305-0194. The examiner can normally be reached on Monday through Thursday after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (703) 305-4378. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

PK
February 3, 2003


CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

2/5/03